

III. Shrubland

III.A.4.N.A. LOWLAND MICROPHYLLOUS EVERGREEN SHRUBLAND

III.A.4.N.a.17. ARTEMISIA TRIDENTATA SHRUBLAND ALLIANCE

Big Sagebrush Shrubland Alliance

Alliance Identifier: A.829

Artemisia tridentata Shrubland

Big Sagebrush Shrubland

ELEMENT CONCEPT

GLOBAL SUMMARY: This broadly defined sagebrush shrubland is described from eastern California, Nevada, and Utah, but likely occurs throughout much of the western U.S. Elevations range from 1340-2225 m. Landforms include dunes, basins and slopes. Substrates are variable; soil texture ranges from sand to clay. This association is used to describe *Artemisia tridentata*-dominated shrublands where the subspecies is not known and the herbaceous layer is generally sparse. The herbaceous layer may be limited by substrate or disturbance. Stands in Utah and California had moderate cover (25-50%) of *Artemisia tridentata* often with scattered individuals of *Ericameria nauseosa* (= *Chrysothamnus nauseosus*), *Sarcobatus vermiculatus*, *Grayia spinosa*, *Gutierrezia sarothrae*, or *Opuntia polyacantha*. If present, the herbaceous layer typically consists of low cover of graminoids such as *Distichlis spicata* and *Elymus elymoides*.

ENVIRONMENTAL DESCRIPTION

USFWS WETLAND SYSTEM:

Ouray National Wildlife Refuge Environment: Near the Refuge headquarters and in Johnson Bottom, big sagebrush shrubland grows on sandy soils of high second terraces, while in Brennan Flat, the terrace soils are silty clays, and are more compact due to sheet runoff. At all sites, big sagebrush shrubs commingle with greasewood in a narrow ecotone, then greasewood becomes the dominant shrub.

Global Environment: This broadly defined sagebrush shrubland is reported from the Great Basin and Uinta Basin but is likely more widespread. Elevations range from 1340-2225 m. Landforms include dunes, basins and slopes. Substrates are variable; soil texture ranges from sand to clay.

VEGETATION DESCRIPTION

Ouray National Wildlife Refuge Vegetation: *Artemisia tridentata* ssp. *tridentata* Shrubland is rare in the Refuge, occupying only three stands. For the stand in Brennan Flat, foliar cover approached 45%, with both very old, mature shrubs and young shrubs/seedlings providing equal amounts of ground cover. The older shrubs were very tall in the Brennan Flats stand, between 3-4 m in height, and some had short, single trunks. In the sandy soils of Johnson Bottom and the site near Refuge headquarters, the big sagebrush shrubs were between 1-2 m tall and foliar cover was 30% and 60% respectively for the stands. Associated shrubs in all big sagebrush stands were *Sarcobatus vermiculatus* and *Ericameria nauseosa*, their contribution to foliar cover was between 5-10%. Little understory growth was present in these stands, the only species observed were *Gutierrezia sarothrae*, *Opuntia polyacantha*, and *Elymus elymoides*.

Global Vegetation: This broadly defined association is used to describe *Artemisia tridentata*-dominated shrublands where the subspecies is not known and the herbaceous layer is generally sparse. The herbaceous layer may be limited by substrate or disturbance. Stands in Utah and California had a moderately dense short-shrub layer (25-70%) dominated by *Artemisia tridentata*. Associated shrub species may codominate, but more typically occur as scattered individuals including *Ericameria nauseosa* (= *Chrysothamnus nauseosus*), *Sarcobatus vermiculatus*, *Grayia spinosa*, *Gutierrezia sarothrae*, or *Opuntia polyacantha*. If present, the herbaceous layer typically consists of low cover of graminoids such as *Distichlis spicata* and *Elymus elymoides*.

Dynamics: Ecological processes vary among sites, but is usually indicative of upper terraces or incised stream systems that have been separated from groundwater.

Ouray National Wildlife Refuge Vegetation Mapping Project

MOST ABUNDANT SPECIES

Ouray National Wildlife Refuge

StratumSpecies

SHRUB *Artemisia tridentata* ssp. *tridentata*, *Sarcobatus vermiculatus*, *Ericameria nauseosa*
HERBACEOUS *Elymus elymoides*

Global

Stratum

Species

SHORT SHRUB *Artemisia tridentata*

CHARACTERISTIC SPECIES

Ouray National Wildlife Refuge

Species

Artemisia tridentata ssp. *tridentata*, *Sarcobatus vermiculatus*, *Ericameria nauseosa*

Global

Species

Artemisia tridentata

OTHER NOTEWORTHY SPECIES

Ouray National Wildlife Refuge

Stratum

Species

N/A

Global

Stratum

Species

N/A

GLOBAL SIMILAR ASSOCIATIONS:

Artemisia tridentata / *Distichlis spicata* Shrubland (CEGL001000)--This is one of many similar *Artemisia tridentata* associations without variety of *Artemisia tridentata* specified.

Artemisia tridentata / *Elymus elymoides* Shrubland (CEGL001001)--This is one of many similar *Artemisia tridentata* associations without variety of *Artemisia tridentata* specified.

SYNONYMY:

Artemisia tridentata Association (Leary and Peterson 1984)

Artemisia tridentata Vegetation Zone VIII (Ralston 1969)

CLASSIFICATION COMMENTS

Ouray National Wildlife Refuge: N/A

Global Comments: This is a broadly defined, low-confidence association that could be split into several associations with more information. There are many associations defined for all subspecies of *Artemisia tridentata*. Leary and Peterson (1984) identified *Artemisia tridentata* in their stands to ssp. *tridentata*; however, their stands were almost pure *Artemisia tridentata* with little else to classify into a less general association.

ELEMENT DISTRIBUTION

Ouray National Wildlife Refuge Range: *Artemisia tridentata* ssp. *tridentata* Shrubland is known only from a small stand about 0.5 mi north of headquarters on Hatchery Road (the road divides the stand), a small stand in Johnson Bottom, and a larger stand in the northern portion of Brennan Flat.

Global Range: This sagebrush shrubland is reported from eastern California, Nevada, and Utah, but likely occurs throughout much of the Intermountain West.

Ouray National Wildlife Refuge Vegetation Mapping Project

Nations: US

States/Provinces: CA NV UT

TNC Ecoregions: 10:C, 6:C

USFS Ecoregions: 341C:CC, 342B:CC

Federal Lands: USFWS (Ouray)

ELEMENT SOURCES

Identifier: CEGL000991 **Confidence:** 3 **Conservation Rank:** G5?

REFERENCES: Leary and Peterson 1984, Ralston 1969, Von Loh 2000.